

REMARKS

This paper is responsive to the Office Action dated June 26, 2008 wherein claims 1, 2, 4-10, 13-17 and 19 were rejected and claims 20 - 35 stand withdrawn pursuant to a requirement for restriction/election. By this paper, claim 1 has been amended, and claim 42 has been added. Claims 1, 2, 4-10, 13-17, 19 and 42 remain pending in this application. In view of the following remarks, Applicant requests further examination and reconsideration of the present patent application.

35 USC 102

Applicant respectfully traverses the rejection of claims 1, 2, 4-9, 13, 15, 16 and 19 under 35 USC §102(b), as being anticipated by Hansen et al. (U.S. Patent No. 5,380,600 Hansen, hereinafter "Hansen").

Applicant respectfully submits that Hansen does not teach or disclose all the elements of the independent claim 1. Claim 1 recites *inter alia*, "produce a hydrogen rich stream."

As clearly brought out in Fig. 1 and multiple places in the current specification such as page 7, lines 18 – 21, the separation unit is configured to produce a hydrogen rich stream 28. Hence the system produces both hydrogen and electrical energy. This is also clearly brought out in the preamble for claim 1 that recites "A system for co-production of hydrogen and electrical energy."

Hansen on the other hand, shows a closed loop system that produces (only) electricity using the Molten Carbonate Fuel cell. See claim 1. As clearly seen from Fig. 1, hydrogen separated from the anode exhaust in hydrogen recovery unit 18 is recycled to anode supply line 40 via line 90. (Hansen, column 3, lines 34-38). Clearly Hansen lacks features of co-production of hydrogen and electricity.

The only similarity between Hansen and the present application is processing steps of anode exhaust and recycle of purified exhaust to anode inlet. There are other aspects of the present system that are much different than Hansen such as production of both hydrogen and electricity. As clearly brought out in page 18, lines 10 – 16, "The co-production systems in accordance with the various embodiments discussed above have the flexibility to control the production of hydrogen from the anode exhaust stream and generation of electricity depending on the demand. For higher demand of exported hydrogen, the fuel cell assembly is operated on low utilization mode wherein the anode exhaust stream comprises higher amount of unutilized

hydrogen, which may be recovered for export using the separation unit downstream of the fuel cell assembly." Hansen clearly lacks such flexibility.

Therefore, Applicant submits that Hansen, does not disclose every element of independent claim 1 and does not anticipate it under 35 USC 102(b). Claims 2, 4-10, 13-17, 19 and 42 depend directly or indirectly from claim 1. Applicant respectfully requests that the Examiner withdraw the rejection under 35 USC 102.

35 USC §103

The Examiner has rejected claims 1, 2, 3-10, 15, 17 and 19 under 35 USC §103(a) as being unpatentable over over Farooque (U.S. Patent No. 5,084,362, hereinafter "Farooque") in view of Nakamura et al. (U.S. Patent No. 7,052,790, hereinafter "Nakamura") as evidenced by Baker (U.S. Patent No. 3,522,101, hereinafter "Baker"). The Examiner has further rejected claims 13, 14 and 16 35 USC §103(a) as being unpatentable over over Farooque and Nakamura as applied to claims 1 and 15 and in further view of Sridhar et al. (U.S. Publication No. 2004/0202914, hereinafter "Sridhar").

First, Independent claim 1, recites a system wherein a portion of the anode exhaust is recycled back to anode inlet.

Farooque on column 2, lines 21 – 26 recites "To promote overall efficiency of the system 1, the supply fuel used for the fuel cell 2 and delivered to the supply line 3 comprises methane. The methane fuel is generated by a conventional methane producing gasifier 5." On column 2, lines 41-49, Farooque recites "In order for the gasifier 5 to process the input coal feedstock, it is additionally necessary that the gasifier be provided with hydrogen and steam to sustain the gasifier reactions. In accordance with the principles of the present invention, the hydrogen required for the gasifier 5 is derived from the fuel cell itself and, in particular, from the unspent hydrogen in the anode exhaust stream."

It is clear that in Farooque, the hydrogen from anode exhaust stream is reacted with coal to produce methane and thus hydrogen itself is not recycled to the anode inlet as taught by claim 1.

Secondly, presently amended claim 1 recites, "produce a hydrogen rich stream." Thus the system has to produce both hydrogen and electrical energy. Farooque, as shown in FIG. 1,

includes a closed loop system and produces only electrical energy. Thus it lacks features of co-production of hydrogen and electricity. A combination with any of the secondary references does not overcome this deficiency.

At least for these reasons among others, Applicant submits that the combination of these references does not teach, suggest or disclose the invention as recited in claim 1 and hence any of the claims dependent directly or indirectly on claim 1. Applicant respectfully requests that the Examiner withdraw the rejection under 35 USC 103.

Summary

For the reasons set out above, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and allowance of the application are, therefore, respectfully requested.

If the Examiner believes that anything further is necessary to place the application in better condition for allowance, the Examiner is kindly asked to contact Applicant's undersigned representative at the telephone number below.

Respectfully submitted,

/Patrick K. Patnode/
Patrick K. Patnode
Reg. No. 40,121

General Electric Company
One Research Circle
Building K1, Room 3A54A
Niskayuna, New York 12309
Telephone: (518) 387-5286
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